



NCC

低功率射頻器材型式試驗報告

產品名稱 : LocoTrack Rechargeable
型號 : HFR4
系列型號 : HGR4
廠牌 : System Loco
商標 : 
申請者 : SYSTEM LOCO LTD
申請者地址 : Parkfield, Greaves Park, Greaves Road, Lancaster, LA1 4TZ, UK
測試標準 : LP0002 (109 版)
參考法規 : ANSI C63.10-2013
測試結果 : 符合
接收日期 : October 5, 2021
測試日期 : December 17~20 ,2021

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修訂紀錄

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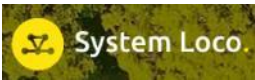
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1. 一般資訊

申請者	SYSTEM LOCO LTD
申請者地址	Parkfield, Greaves Park, Greaves Road, Lancaster, LA1 4TZ, UK
製造商	SYSTEM LOCO LTD
製造商地址	Parkfield, Greaves Park, Greaves Road, Lancaster, LA1 4TZ, UK
實驗室	台灣曼瑞檢測科技有限公司
實驗室地址	33377 台灣桃園市龜山區復興二路 38 號
實驗室資訊	1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm. 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada. 3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.
實驗室測試環境條件	溫度 (°C) : 20-35 / 濕度 (%RH) : 30-65

2. 產品描述

2.1 產品資訊

產品名稱	LocoTrack Rechargeable
產品型號	HFR4
系列型號	HGR4
廠牌	System Loco
商標	
頻率範圍	110kHz-205kHz
無線充電規格	Output Power: 5W
配件	
電源供應器	Brand: Asian Power Devices Model No: WB-10E05R Input: AC 100-240V, 50-60Hz 0.4A Output: DC 5V, 2A Cable Out: Non-shielding, 1.8m

Note:

1. 型號差異：系列差異僅為主型號 HFR4 有電池及外接 DC Cable 搭配電源供應器；系列型號 HGR4 為單純電池供電(上述說明為廠商宣告)。

2.2 產品規格

Type of modulation	ASK
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2.3 測試模式

Test Mode	Mode1: HFR4 with WPC
	Mode2: HGR4 with WPC

2.4 測試配置

待測物測試配置圖



2.5 測試周邊

待測裝置測試時，其搭配系統測試時之週邊裝置包括如下：

No.	周邊名稱	廠牌	型號	序號	電源線
1	Wireless Charger	Speedy	SHQI-PC10WHC	N/A	Non-shielded, 1.8m

2.6 操作程序

1.	Plug the adapter to EUT
2.	Put the phone on EUT
3.	Start test.

3. 測試設備明細

電源傳導 – SR2

儀器名稱	廠牌	型號	財產編號	校正年限	校正有效日期
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 年	2022/3/23
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 年	2022/4/28
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 年	2022/5/25

輻射干擾 – AC1

儀器名稱	廠牌	型號	財產編號	校正年限	校正有效日期
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 年	2022/5/6
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 年	2022/10/4
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 年	2022/3/24

EMI 測試軟體

軟體名稱	廠牌	版本
e3	Audix	9.160520a
EMI	Quietek	V3

4. 量測不確定度

電源傳導量測-電源線 (Conducted Emission- Power Line)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.53dB
電源傳導量測-通訊埠 (Conducted Emission- Impedance Stabilization Network Measurement)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.96dB
輻射干擾量測 (Radiated Spurious Emission)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 3.92dB (Below 30M)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.25dB (30M~1G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.40dB (1G~18G)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 4.45dB (18G~40G)

5. 測試結果

產品名稱 LocoTrack Rechargeable
型號 HFR4

法規章節	量測項目	限制值	測試結果	測試數據
3.3	電源傳導	低功率射頻器材技術規範 3.3 節	符合	第 5.1 章節
3.2	天線之要求	低功率射頻器材技術規範 3.2 節	符合	第 5.2 章節
3.6	輻射電場強度	低功率射頻器材技術規範 3.6 節	符合	第 5.3 章節

備註：符合性的判定是基於測試結果符合規範的限制值或客戶的宣告要求，測試結果的判定是不考慮測量不確定度的值。

5.1 電源傳導測試

5.1.1 量測方法

待測物放置於1m*2m*0.8m之非導體桌面並離垂直牆面40cm（落地型產品置於地上），將待測物之電源線接至電源阻抗網路器(LISN)，同時保持待測物至LISN距80公分，並將電源線多餘部份以30至40公分之八字形捆綁於電源線中央並離地40cm，於在正常工作狀態下，執行待測物之火線(Line)及地線(neutral)各一次量測。

電源端點場強之測量範圍由 0.15MHz –30MHz，所量測之讀值皆為準尖峰值(Quasi-Peak Value)及平均值(Average Value)。場強接收機之解析頻寬為9kHz。

備註：經初測驗證過，電源端點干擾測試對測試頻道數並無差異，因此檢附其中一個測試頻道之測試數。

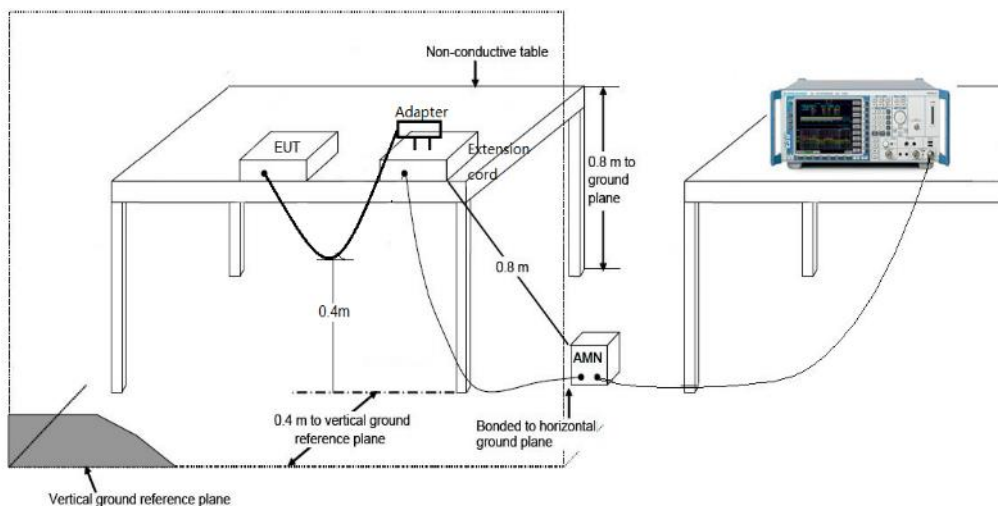
5.1.2 限制要求

以市電為電源之低功率射頻器材，其傳導回電源線上頻率自150kHz至30MHz之射頻電壓(在電源端子每一電源線對接地點)應小於或等於下表所列之限值。測量時應經過50微亨利(μ H)及50歐姆(Ω)之電源線阻抗模擬網路(LISN)。頻率重疊處，以較低限值為準。

Frequency 頻率範圍 MHz	傳導限制值(dBuV/m)	
	準尖峰值	平均值
0.15 - 0.50	66-56 _(註)	56-46 _(註)
0.50-5.0	56	46
5.0 - 30	60	50

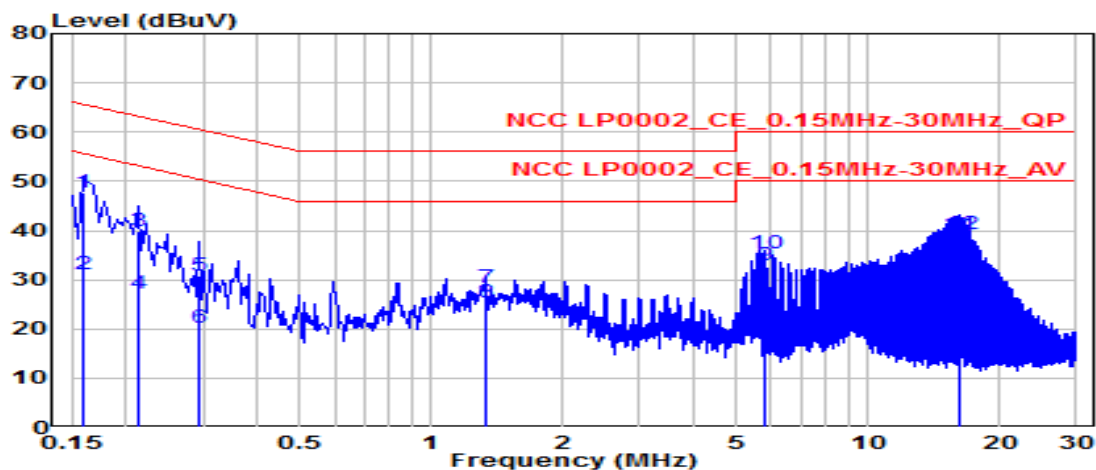
註：隨頻率之對數遞減

5.1.3 測試架構圖



5.1.4 電源傳導測試結果

EUT	Loco Track Rechargeable	Date of Test	2021-12-20
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	24°C / 54%
Polarity	Line1	Site / Test Engineer	SR2 / Fran
Test Mode	Mode1	Test Voltage	AC 110V/60Hz

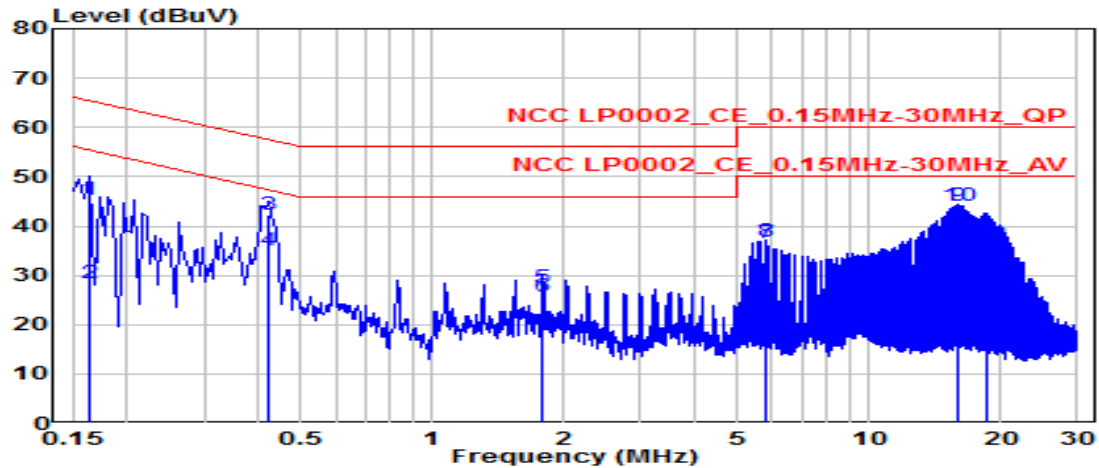


No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	0.159	38.08	9.61	47.69	-17.82	65.52	QP
2	0.159	21.58	9.61	31.19	-24.33	55.52	Average
3	0.213	30.18	9.61	39.80	-23.29	63.09	QP
4	0.213	17.56	9.61	27.18	-25.91	53.09	Average
5	0.294	21.06	9.62	30.67	-29.74	60.41	QP
6	0.294	10.60	9.62	20.21	-30.20	50.41	Average
7	1.324	18.60	9.67	28.27	-27.73	56.00	QP
8	1.324	15.72	9.67	25.39	-20.61	46.00	Average
9	5.842	23.20	9.76	32.96	-27.04	60.00	QP
10	5.842	25.66	9.76	35.42	-14.58	50.00	Average
11	*	16.132	9.93	39.04	-20.96	60.00	QP
12	*	16.132	9.93	39.28	-10.72	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

EUT	Loco Track Rechargeable	Date of Test	2021-12-20
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	24°C /54%
Polarity	Neutral	Site / Test Engineer	SR2 / Fran
Test Mode	Mode1	Test Voltage	AC 110V/60Hz

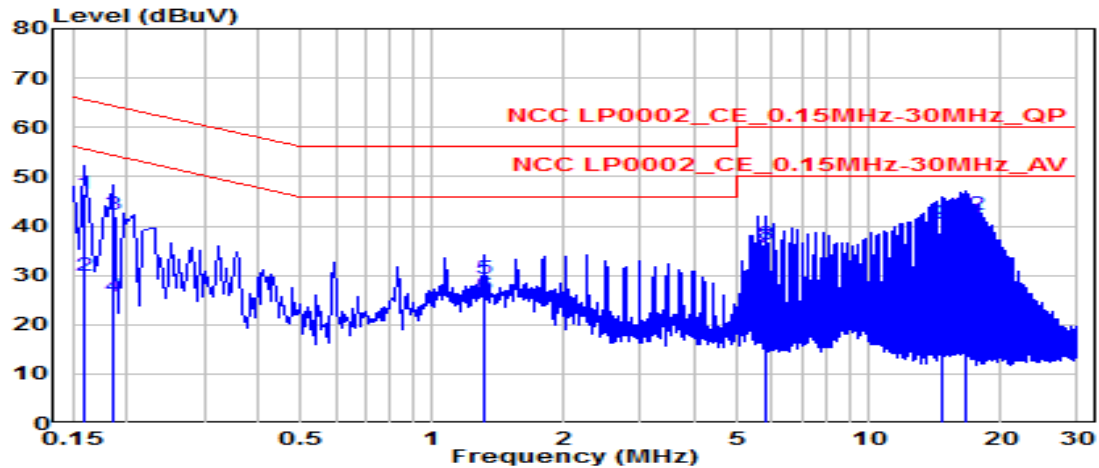


No	Frequency (MHz)	Reading (dBUV)	C.F (dB)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Remark (QP/PK/AV)
1	0.163	35.54	9.62	45.16	-20.12	65.28	QP
2	0.163	18.67	9.62	28.28	-27.00	55.28	Average
3	0.420	32.70	9.63	42.33	-15.12	57.45	QP
4	0.420	25.42	9.63	35.05	-12.40	47.45	Average
5	1.783	17.73	9.69	27.41	-28.59	56.00	QP
6	1.783	15.98	9.69	25.67	-20.33	46.00	Average
7	5.828	26.70	9.77	36.48	-23.52	60.00	QP
8	5.828	26.96	9.77	36.74	-13.26	50.00	Average
9	*	16.056	9.98	44.05	-15.95	60.00	QP
10	*	16.056	9.98	44.19	-5.81	50.00	Average
11	18.670	26.09	10.03	36.12	-23.88	60.00	QP
12	18.670	26.15	10.03	36.18	-13.82	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBUV/m) = Reading(dBUV) + C.F (Correction Factor).

EUT	Loco Track Rechargeable	Date of Test	2021-12-20
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	24°C /54%
Polarity	Line1	Site / Test Engineer	SR2 / Fran
Test Mode	Mode2	Test Voltage	AC 110V/60Hz

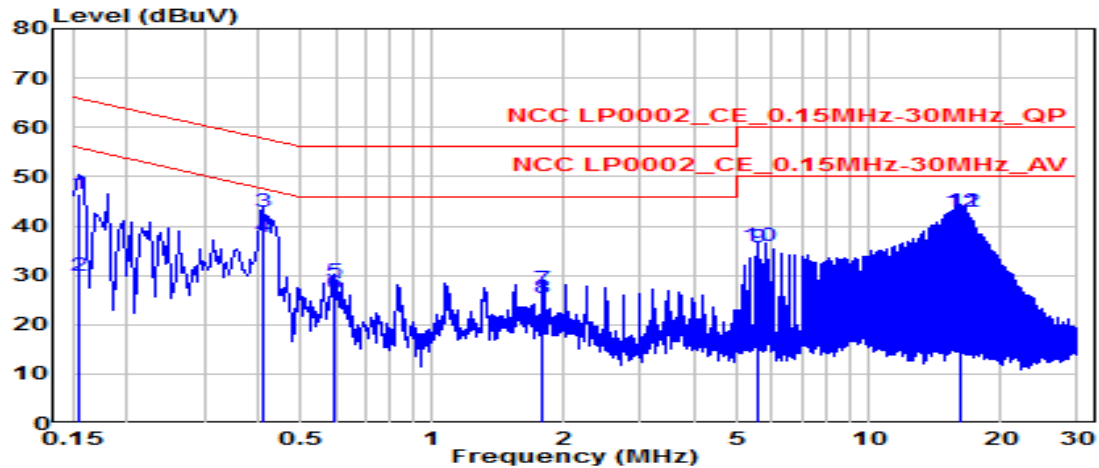


No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	0.159	36.92	9.61	46.53	-18.99	65.52	QP
2	0.159	20.41	9.61	30.02	-25.50	55.52	Average
3	0.186	32.78	9.61	42.40	-21.82	64.21	QP
4	0.186	16.16	9.61	25.78	-28.44	54.21	Average
5	1.311	19.53	9.67	29.19	-26.81	56.00	QP
6	1.311	16.36	9.67	26.03	-19.97	46.00	Average
7	5.828	25.75	9.76	35.51	-24.49	60.00	QP
8	5.828	26.42	9.76	36.18	-13.82	50.00	Average
9	14.630	30.58	9.92	40.50	-19.50	60.00	QP
10	14.630	30.70	9.92	40.61	-9.39	50.00	Average
11	* 16.767	30.92	9.94	40.86	-19.14	60.00	QP
12	* 16.767	32.47	9.94	42.41	-7.59	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

EUT	Loco Track Rechargeable	Date of Test	2021-12-20
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	24°C /54%
Polarity	Neutral	Site / Test Engineer	SR2 / Fran
Test Mode	Mode2	Test Voltage	AC 110V/60Hz



No	Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Remark (QP/PK/AV)
1	0.154	36.89	9.62	46.50	-19.25	65.75	QP
2	0.154	20.40	9.62	30.02	-25.74	55.75	Average
3	0.411	33.29	9.63	42.91	-14.71	57.63	QP
4	0.411	28.10	9.63	37.73	-9.90	47.63	Average
5	0.595	18.93	9.64	28.57	-27.43	56.00	QP
6	0.595	16.53	9.64	26.17	-19.83	46.00	Average
7	1.783	17.46	9.69	27.15	-28.85	56.00	QP
8	1.783	15.81	9.69	25.50	-20.50	46.00	Average
9	5.590	25.83	9.77	35.60	-24.40	60.00	QP
10	5.590	26.11	9.77	35.88	-14.12	50.00	Average
11	*	16.290	9.99	42.97	-17.03	60.00	QP
12	*	16.290	9.99	42.99	-7.01	50.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

5.2 天線之要求

5.2.1 限制要求

依據國家通訊傳播委員會低功率射頻器材技術規範之第3.2節規定，低功率射頻器材之發射機或收發信機所使用之天線，應為全固定、半固定式或以獨特之耦合(unique coupling)方式連接機體。製造者可設計供使用者因損壞而替換之天線，但不得設計或使用原認證以外之天線或可供引接各類電纜之標準天線插座或電氣連接頭，如：BNC、F type、N type、M type、UG type、RCA、SMA、SMB...等及其他各類工業或通訊標準接頭。

5.2.2 天線樣式

此 LocoTrack Rechargeable 其天線為 Loop Antenna Type

No.	Brand	Part No.
1	Qisda	TY.1JC30.003

5.3 輻射電場強度

5.3.1 量測方法

待測物置於非導體桌面（落地型產品置於地上），受測物使用交流電源時，將其與任何配件設備之電源線連接至位於旋轉桌的交流電源。受測物使用電池時，測試時應裝置新電池或充電完全的電池。受測物與配件設備之電源線無須束綁，桌面上受測設備的所有電源線由桌子的後緣垂下沿旋轉桌表面接至交流插座。落地型設備的交流電源線可以方便的型態走線。桌面可 360 度旋轉，接收天線置於距待測物 3m 距離，高度可在 1 至 4 公尺間變動，以量測待測物之最大輻射電場強度，接收天線並應於水平及垂直極化方向各量測一次。（待測物擺設方式根據 ANSI C63.10-2013 版本，待測物放置桌中心，1G 以下擺設高度為 80cm/1G 以上擺設高度為 150cm）

- (1) 任一頻率小於或等於 1000 MHz 之訊號,使用 CISPR 準峰值檢波器
- (2) 任一頻率大於 1000 MHz 之訊號，使用平均值檢波器測量，當規定之發射限制值為平均值時(含 1000 MHz 以下)，受測訊號藉由峰值檢波器(RBW:1MHz,VBW:3MHz)所測量之峰值，亦須符合峰值發射限制值，其峰值發射限制值為最大容許平均值加 20 dB。

5.3.2 限制要求

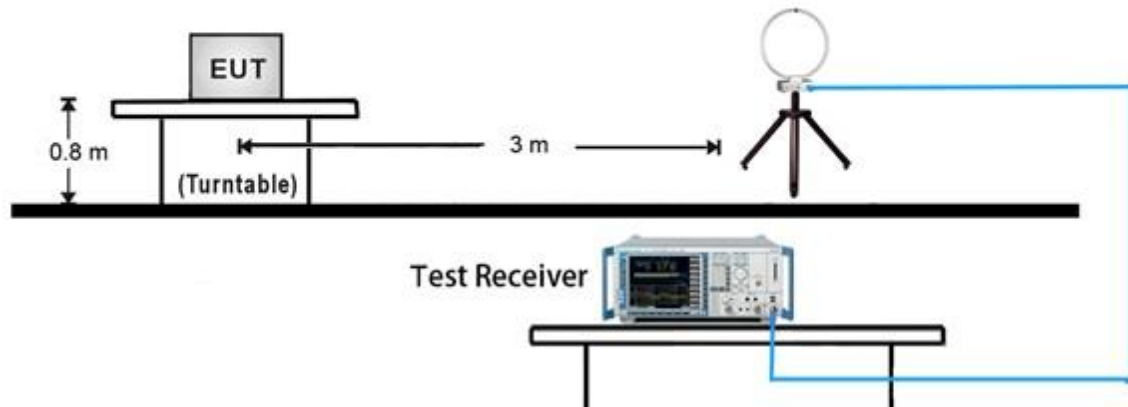
其電場強度不得超過下表之限值，且其不必要之發射皆不得大於主波發射強度。各頻段重疊處，以較嚴格之限制值為準。

頻率(f) (MHz)	電場強度 (微伏特/公尺, $\mu\text{V}/\text{m}$)	測距 (公尺)
$0.009 \leq f \leq 0.490$	$2400/f(\text{kHz})$	300
$0.490 < f \leq 1.705$	$24000/f(\text{kHz})$	30
$1.705 < f < 30$	30	30
$30 \leq f \leq 88$	100	3
$88 < f \leq 216$	150	3
$216 < f \leq 960$	200	3
$960 < f$	500	3

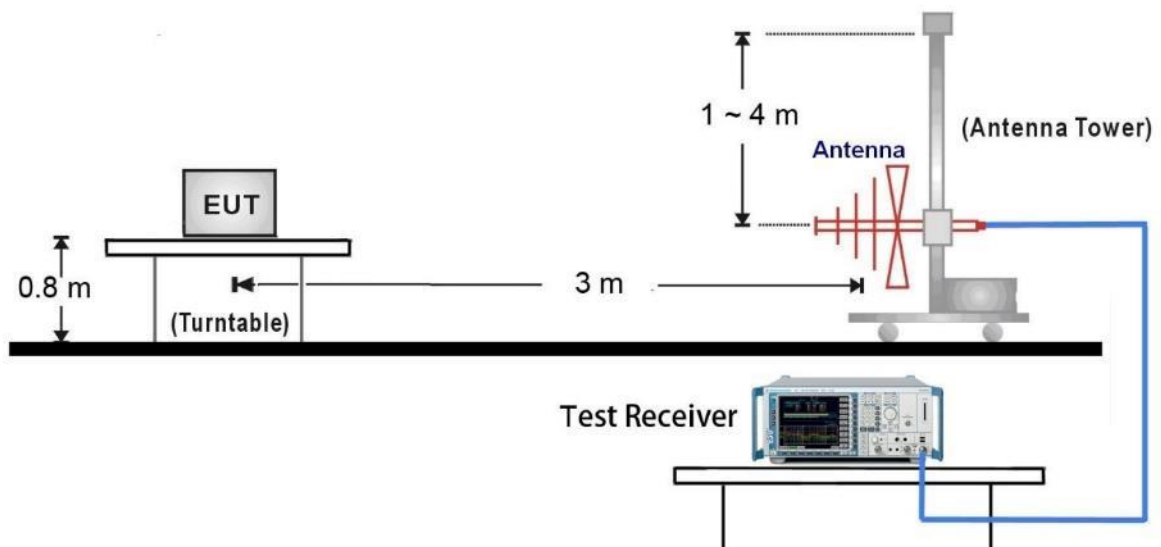
上表規定之電場強度，發射頻率在 9 kHz~90 kHz、110 kHz~490 kHz 及 1000MHz 以上者，其量測應以平均值檢波器為基準，且須符合低功率射頻器材技術規範第 6.14.節之規定；其他發射頻率，應以 CISPR 準峰值(quasi-peak) 檢波器測量；非以上表所指定之距離測量時，應符合第 6.5 節之規定，而輻射發射之量測頻率範圍須符合低功率射頻器材技術規範第 6.12 節之規定。

5.3.3 測試架構圖

Under 30MHz Test Setup

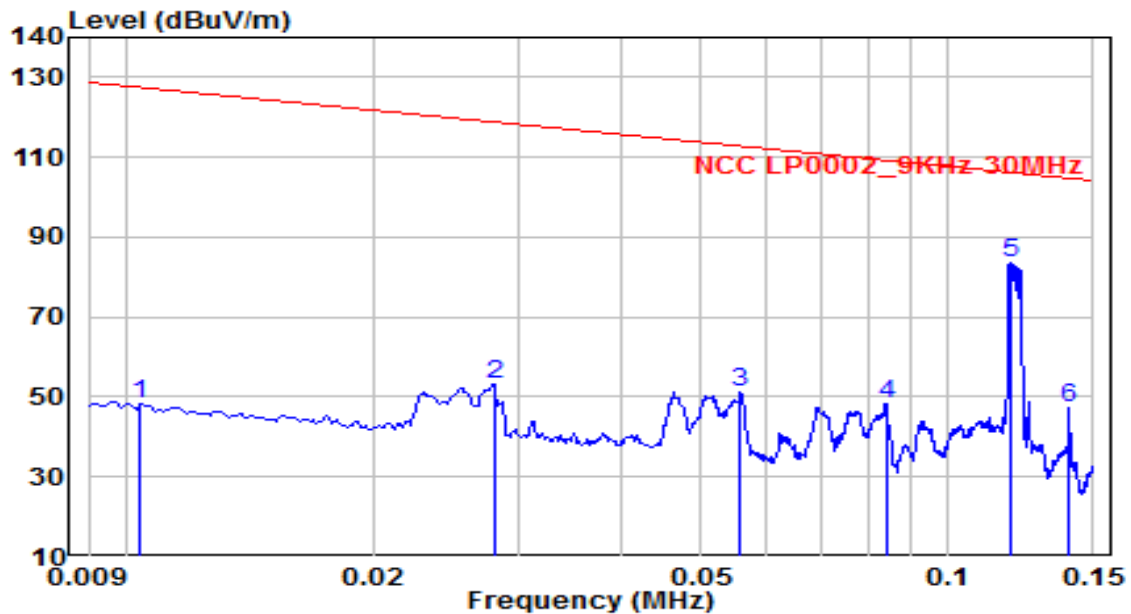


Under 1GHz Test Setup



5.3.4 輻射電場強度測試結果

EUT	Loco Track Rechargeable	Date of Test	2021-12-18
Factor	FMZB 1519B	Temp. / Humidity	23°C / 50%
Polarity	--	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HFR4 with WPC	Test Voltage	AC 110V/60Hz

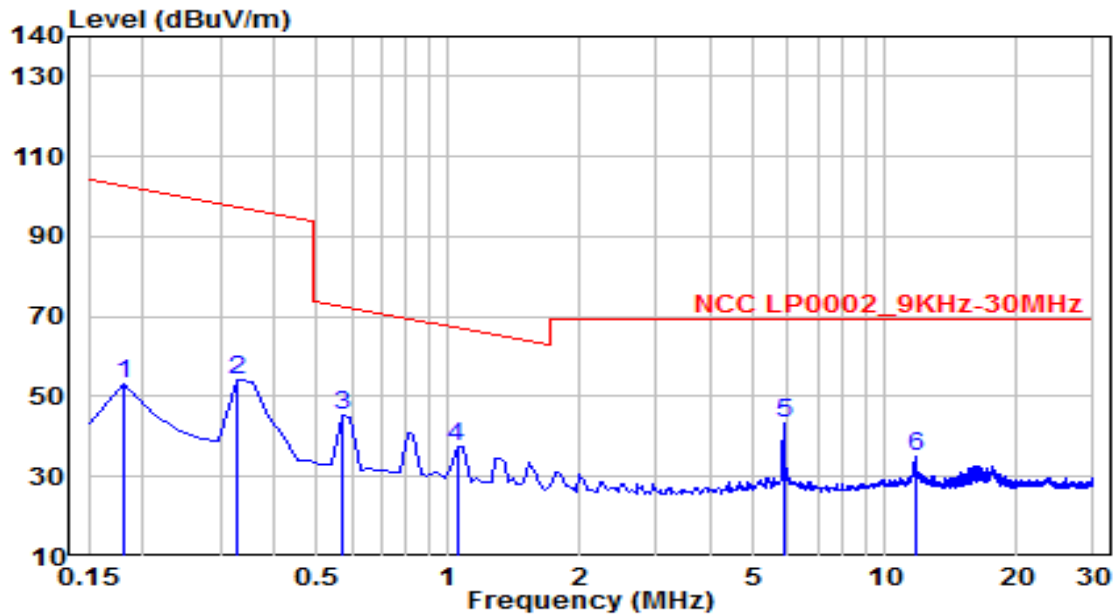


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	0.010	30.48	17.65	48.13	-79.11	127.24	100	360	Peak
2	0.028	34.07	19.32	53.39	-65.25	118.64	100	360	Peak
3	0.056	31.86	19.28	51.14	-61.52	112.66	100	360	Peak
4	0.084	29.61	18.66	48.28	-60.84	109.11	100	360	Peak
5	* 0.119	65.17	18.37	83.54	-22.58	106.11	100	360	Peak
6	0.140	29.04	18.43	47.47	-57.19	104.66	100	360	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-18
Factor	FMZB 1519B	Temp. / Humidity	23°C /50%
Polarity	--	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HFR4 with WPC	Test Voltage	AC 110V/60Hz

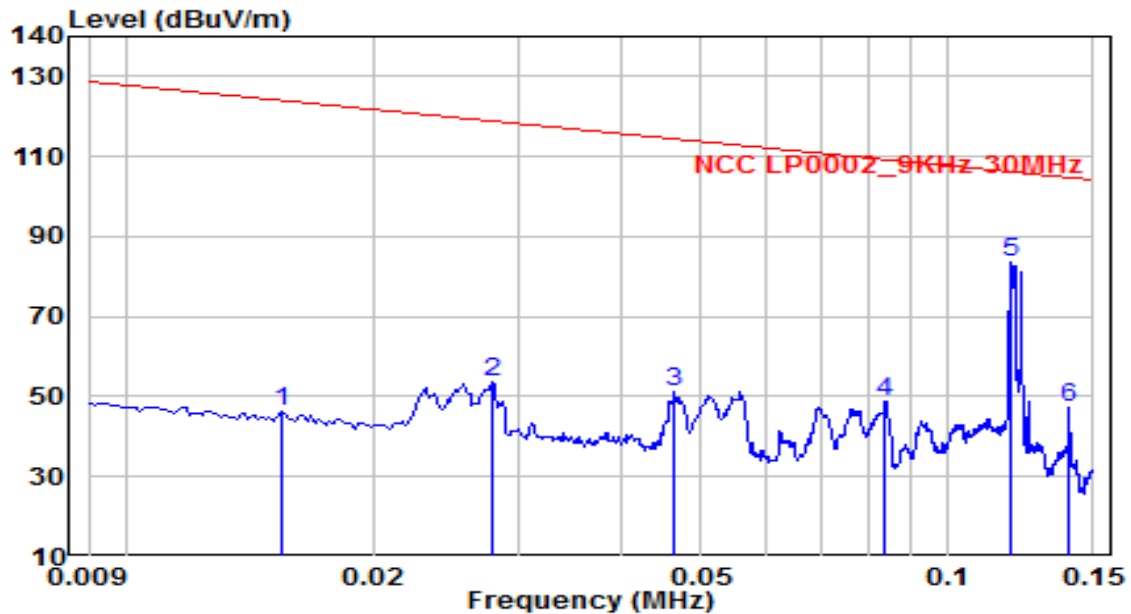


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	0.180	34.63	18.55	53.18	-49.32	102.50	100	360	Peak
2	0.329	35.27	18.93	54.19	-43.06	97.26	100	360	Peak
3	0.568	26.13	18.96	45.08	-27.44	72.52	100	360	Peak
4	1.046	18.39	19.06	37.45	-29.78	67.24	100	360	Peak
5	* 5.881	23.66	19.71	43.37	-26.13	69.50	100	360	Peak
6	11.762	13.64	21.38	35.02	-34.48	69.50	100	360	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-18
Factor	FMZB 1519B	Temp. / Humidity	23°C /50%
Polarity	--	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HGR4 with WPC	Test Voltage	AC 110V/60Hz

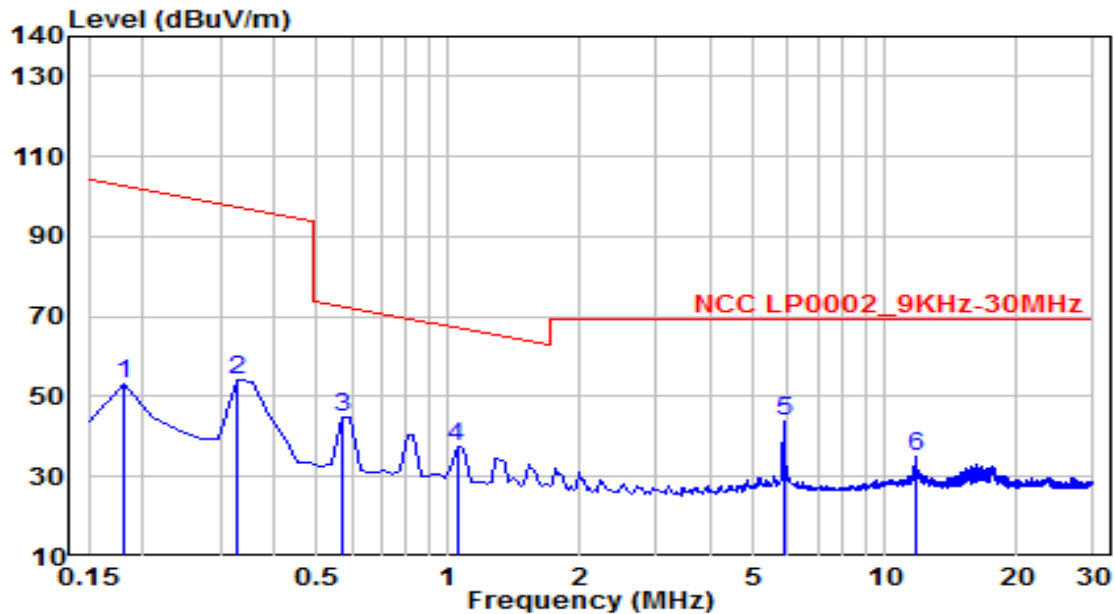


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	0.015	28.36	18.13	46.49	-77.30	123.79	100	360	Peak
2	0.028	34.12	19.31	53.43	-65.25	118.68	100	360	Peak
3	0.046	31.69	19.43	51.12	-63.16	114.27	100	360	Peak
4	0.084	29.95	18.66	48.62	-60.51	109.13	100	360	Peak
5	* 0.119	65.09	18.37	83.45	-22.64	106.09	100	360	Peak
6	0.140	28.80	18.43	47.23	-57.44	104.67	100	360	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-18
Factor	FMZB 1519B	Temp. / Humidity	23°C /50%
Polarity	--	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HGR4 with WPC	Test Voltage	AC 110V/60Hz

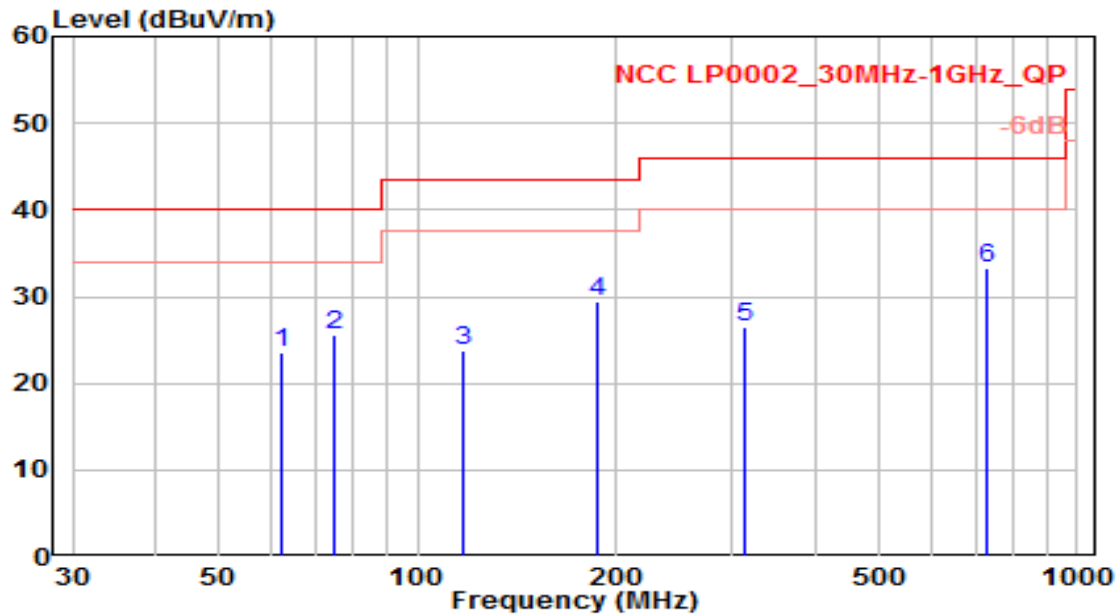


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	0.180	34.39	18.55	52.94	-49.57	102.50	100	360	Peak
2	0.329	35.16	18.93	54.09	-43.17	97.26	100	360	Peak
3	0.568	26.03	18.96	44.99	-27.54	72.52	100	360	Peak
4	1.046	18.41	19.06	37.47	-29.77	67.24	100	360	Peak
5	* 5.881	24.19	19.71	43.90	-25.60	69.50	100	360	Peak
6	11.762	13.87	21.38	35.26	-34.24	69.50	100	360	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-17
Factor	VULB 9162	Temp. / Humidity	23°C /50%
Polarity	Horizontal	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HFR4 with WPC	Test Voltage	AC 110V/60Hz

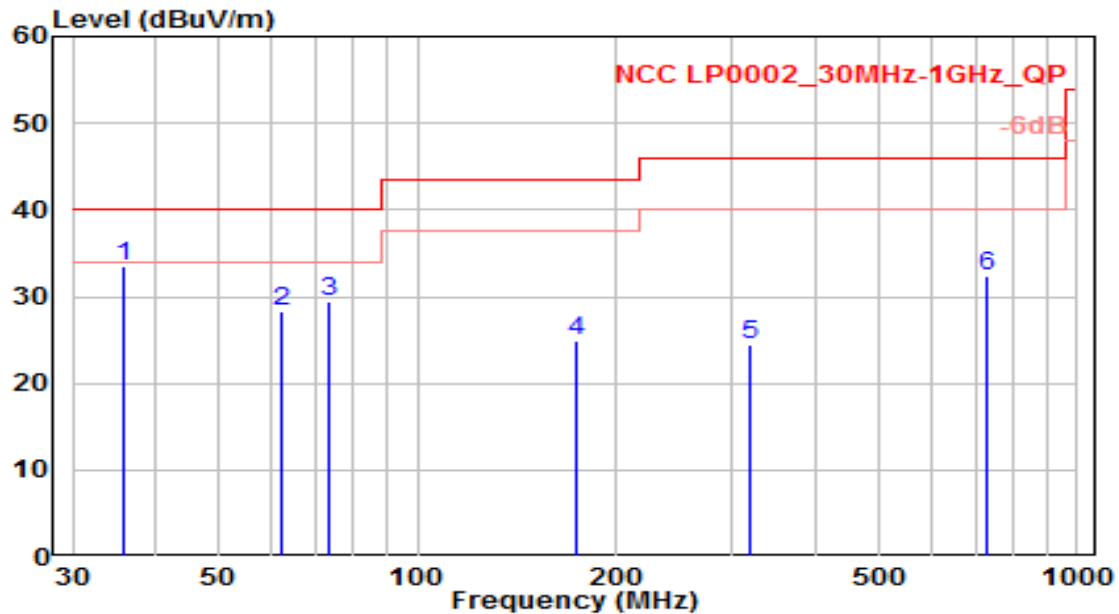


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	62.010	4.48	19.16	23.64	-16.36	40.00	100	155	QP
2	74.620	10.23	15.28	25.52	-14.48	40.00	100	240	QP
3	117.300	5.92	17.88	23.81	-19.69	43.50	100	120	QP
4	187.140	11.33	18.06	29.39	-14.11	43.50	100	185	QP
5	312.270	4.57	21.90	26.47	-19.53	46.00	100	190	QP
6	* 729.370	3.64	29.73	33.36	-12.64	46.00	100	135	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-17
Factor	VULB 9162	Temp. / Humidity	23°C /50%
Polarity	Vertical	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HFR4 with WPC	Test Voltage	AC 110V/60Hz

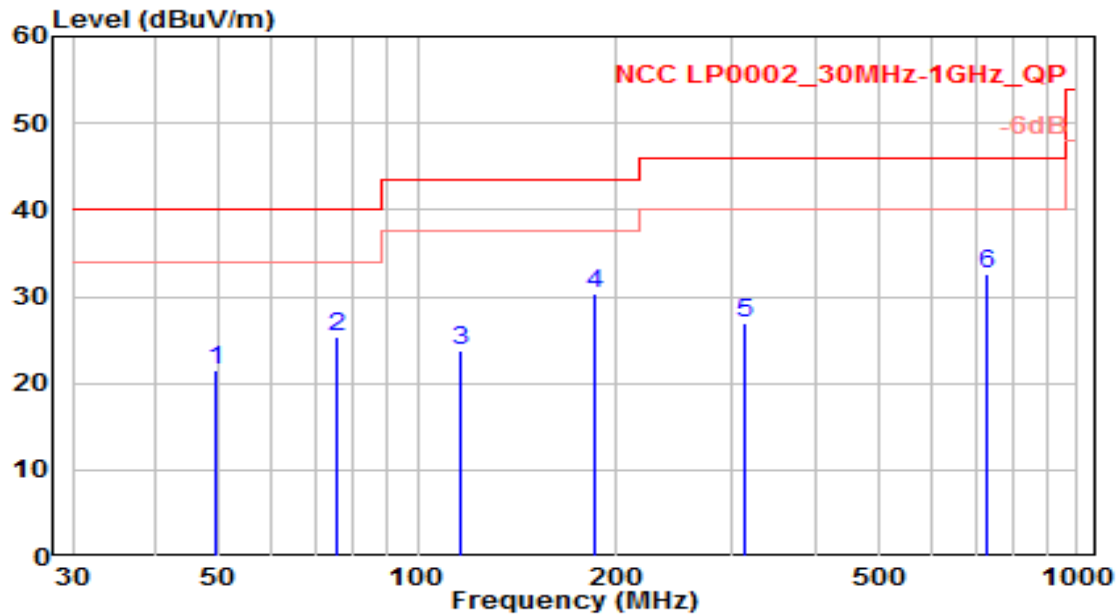


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	35.820	14.89	18.64	33.53	-6.47	40.00	100	165	QP
2		62.010	9.23	19.16	28.39	-11.61	40.00	100	330	QP
3		73.650	13.91	15.47	29.38	-10.62	40.00	100	285	QP
4		173.560	8.14	16.84	24.98	-18.52	43.50	100	115	QP
5		318.090	2.30	22.09	24.39	-21.61	46.00	100	195	QP
6		731.310	2.55	29.75	32.30	-13.70	46.00	100	210	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-17
Factor	VULB 9162	Temp. / Humidity	23°C /50%
Polarity	Horizontal	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HGR4 with WPC	Test Voltage	AC 110V/60Hz

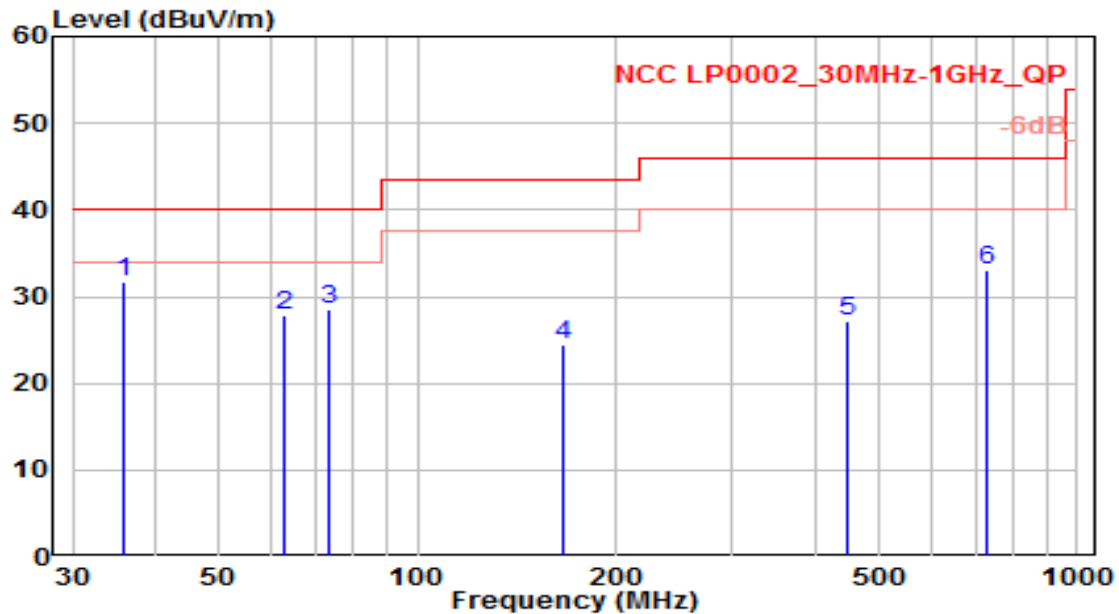


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	49.400	0.14	21.43	21.57	-18.43	40.00	100	65	QP
2	75.590	10.19	15.10	25.28	-14.72	40.00	100	280	QP
3	116.330	5.68	18.01	23.69	-19.81	43.50	100	160	QP
4	* 186.170	12.42	17.94	30.36	-13.14	43.50	100	95	QP
5	312.270	5.02	21.90	26.92	-19.08	46.00	100	300	QP
6	730.340	2.95	29.74	32.69	-13.31	46.00	100	45	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Loco Track Rechargeable	Date of Test	2021-12-17
Factor	VULB 9162	Temp. / Humidity	23°C /50%
Polarity	Vertical	Site / Test Engineer	AC1 / Kaunaz
Test Mode	HGR4 with WPC	Test Voltage	AC 110V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	35.820	13.07	18.64	31.71	-8.29	40.00	100	265	QP
2		62.980	9.16	18.80	27.96	-12.04	40.00	100	90	QP
3		73.650	12.98	15.47	28.45	-11.55	40.00	100	145	QP
4		165.800	7.97	16.51	24.48	-19.02	43.50	100	220	QP
5		450.010	2.46	24.69	27.16	-18.84	46.00	100	85	QP
6		732.280	3.27	29.77	33.04	-12.96	46.00	100	310	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

The End